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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,531	11/25/2003	George H. Hofmann	AD6935 USNA	5344

23906 7590 02/22/2006

E I DU PONT DE NEMOURS AND COMPANY  
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WILMINGTON, DE 19805

EXAMINER
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ASINOVSKY, OLGA

ART UNIT	PAPER NUMBER
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1711

DATE MAILED: 02/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/721,531

Applicant(s)

HOFMANN, GEORGE H.

Examiner

Olga Asinovsky

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

There is no amendment in the response after non-final action.

The rejection of claims 1-18 under 112, 2<sup>nd</sup> paragraph is withdrawn because the phrase "crosslinking polyvinylbutyral (PVBX)" in claim 1 can include any source for crosslinking PVB. Claim 1 can include any type of PVB including modified or non-modified PVB, since any type of PBV works within the same expectation for obtaining the similar result.

### ***Claim Rejections - 35 USC § 102***

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1-5, 9-12, 15 and 17-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Lenox et al U.S. Patent 6,921,791.

### ***Response to Arguments***

3. Applicant's arguments filed 01/09/2006 have been fully considered but they are not persuasive. Applicant's argument is That Lenox does not disclose "use of a cross-linked PVB composition (PVBX)", page 3. Specifically, the argument is that the PVB "diluent" in Lenox invention is not cross-linked or reacted with the other components of the blend.
4. Lenox discloses and claims a thermoplastic elastomer composition, the thermoplastic elastomer being the reaction product of a dynamically vulcanized blend consisting of (a) at least one epoxidized elastomer, (b) at least one ionomer such as an ethylene/(meth)acrylic acid copolymer and a diluent polymer (c) that can be selected

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such as polyvinyl butyral, claim 1 at column 8, column 2, line 15, and column 3, line 37.

The ionomer copolymer such as an ethylene/(meth)acrylic acid copolymer is readable in the present claims 5, 13 for being at least a "functional equivalent" of polycarboxylic acids. Lenox is clearly disclosed "reaction product" and a "dynamically vulcanized blend". The process condition for obtaining the thermoplastic elastomer in Lenox invention is sufficient for producing homogeneous thermoplastic elastomer being the reaction product. The statements "reaction product" and "dynamically vulcanized" are within the scope of a "crosslinked polyvinylbutyral" in the present claim 1 and "crosslinking reaction" in the present claim 12. The diluent polymer=polyvinyl butyral can be present in the amount from 5 to 80wt.% that is readable in the present claims 2-4.

### ***Claim Rejections - 35 USC § 103***

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
6. Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hofmann U.S. Patent 6,506,835.

### ***Response to Arguments***

7. Applicant's arguments filed 01/09/2006 have been fully considered but they are not persuasive. The applicant's argument is that "carboxylic acid functionality typically reacts with hydroxyl functionality only under the influence of some sort of catalyst," page 4. There is no evidence that such reaction may occur in Hofmann invention.

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8. The ethylene-based copolymer compatibilizer having carboxyl-functionality can include ethylene/vinyl acetate copolymer and ethylene/alkyl (meth)acrylic acid copolymer, col. 2, lines 66-67 and col. 3, lines 1-31 and 45-67 are readable for being a cross-linking agents in the present claims 5 and 13. The acid functionality of these copolymers enhances the physical properties of the resulting polymer. In the process for making all ingredients were added to the mixer except the PVC. After the mix appeared to be homogeneous, the PVC was added, col. 5, lines 48-51. The process condition is readable in the present claims 12, 15 and 16. Hofmann does not use term "chemical reaction", however, upon the process condition in the reference's invention a "chemical reaction" is occurred because reference discloses the analogous ingredients and the analogous process condition.

9. Claims 6-8, 13-14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lenox et al U.S. Patent 6,921,791 as applied to claims 1-5, 9-12, 15 and 17-18 above, and further in view of Hofmann U.S. patent 6,506,835.

Any additional thermoplastic polymer would be expected in Lenox invention, therefore, a PVC in Hofmann invention can be used to modify the thermoplastic elastomer in Lenox for producing a product having desired physical properties.

### ***Conclusion***

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Olga Asinovsky whose telephone number is 571-272-1066. The examiner can normally be reached on 9:00 to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571-272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

oA

February 19, 2006

Olga Asinovsky  
Examiner  
Art Unit 1711



James J. Seidleck  
Supervisory Patent Examiner  
Technology Center 1700